

Overall evaluation:

This manuscript presents a 216-day multi-band, multi-constellation shipborne GNSS dataset acquired aboard R/V Laura Bassi during an extensive voyage from Europe to Antarctica and back. The long temporal coverage, broad geographic extent, inclusion of L5 RF block observations, and simultaneous preservation of RF-spectrum information make the dataset potentially valuable for several research communities, including GNSS positioning, ionospheric and tropospheric studies. The manuscript is generally comprehensive and demonstrates considerable effort in data collection, processing, quality assessment, and documentation. Meanwhile, some aspects of the manuscript could be improved, such as some terminology and conclusions appear stronger than what is directly established by the presented validation, as is mentioned in specific comments below as well as the comments from the first referee. Also, some of the potential atmospheric/ionospheric applications mentioned in the manuscript are based on derived products rather than directly observed quantities. Potential users should expect to be clearly informed of such distinctions and acknowledge the processing/auxiliary information required to turn raw observations into those geophysical quantities. My overall evaluation is that the dataset described in the manuscript have clear scientific value and is suitable for publication as an ESSD data-description paper after minor revisions to some details in presentation on validation and application part.

Specific comments:

1. The abstract has shown comprehensive information about the dataset, including the instrument, observations, and downstream usage. One thing I noticed about the abstract is that there are many abbreviations, some of which are not accompanied by their full forms, such as RF, RFI and TEC. As a data-description paper, the readership extends beyond specialists in the field to include potential data users who don't necessarily have expertise in the related field and don't have the time to read through the whole paper, I would recommend that full forms of abbreviations be presented whenever possible in the abstract unless the journal has specific limitation on length of abstract.
2. From Line 63 on Page 3, the '216 continuous days are recorded' while in abstract the daily files are said to have 'two partial'. It would be better to clarify whether there are missing days, or there are temporal gaps within a single day.
3. The abstract describes the 37,144,455 UBX-NAV-PVT records as 'high-precision navigation epochs.' However, Section 5.2 appears to establish primarily the availability and geometry of the

navigation solution (e.g., 3-D fix status, satellite count, and pDOP), rather than independently demonstrating high positioning precision for every epoch. I suggest clarifying what ‘high-precision’ refers to here. If it is not associated with a quantitatively defined precision criterion, a more neutral term such as ‘navigation epochs’ may be preferable.

4. The dataset has potentially valuable applications for tropospheric delay and PWV (precipitable-water-vapour) studies as mentioned in the manuscript. However, it would be useful to distinguish more explicitly between quantities directly contained in the released GNSS observations and geophysical products that require additional processing and auxiliary information. In particular, PWV is not a direct GNSS observable. Please identify the additional meteorological information and processing assumptions required for such retrievals so that prospective users can assess whether the dataset is suitable for this application.